



# PREPARATIONS FOR A1. WATER SAMPLING

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This chapter of the *National Field Manual for the Collection of Water-Quality Data* provides guidelines for field personnel as they prepare to select and (or) evaluate surface-water and ground-water sampling sites, establish site files, and prepare for sample-collection field trips.

## FIELD-PERSONNEL 1.0 RESPONSIBILITIES

Before sample collection begins, field personnel must take steps to ensure that the samples collected will be representative of the aqueous system being investigated. A representative water sample is a sample that typifies ("represents") that part of the aqueous system to be studied and is delineated by the objectives and scope of the study. USGS data-collection efforts often take a whole-system approach, meaning that data-collection methods ensure representation of an entire stream reach or aquifer volume. A modified approach is needed for studies in which samples are representative of a specific part or aspect of an aqueous system instead of the entire system; for example, a study of aquatic ecology may establish nearshore boundaries on the system, and an oil-spill study may target only the surface of a water-table aquifer within a designated boundary or circumference.

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- ▶ Be alert to sample representativeness. The data are no better than the confidence that can be placed in how well the sample represents the aqueous system (Feltz and Culbertson, 1972). +
- ▶ Plan to collect quality-control samples. Quality-control checks applied during laboratory analyses of the samples cannot compensate for data that are biased because samples were not representative of the aqueous system or because samples were improperly collected and processed.

Field personnel are also responsible for providing the necessary information to establish USGS National Water Information System (NWIS)<sup>2</sup> site files for each sampling site and for checking to see that the site file is functional, that the information it contains is correct, and that updates are made promptly.

### ***Update files promptly:***

- ▶ The Ground-Water Site Inventory (GWSI) file contains site information.
- ▶ The Quality-of-Water Data (QWDATA) file contains field and laboratory data.
- ▶ The Automatic Data Processing System (ADAPS) file contains time-series information. +

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<sup>2</sup>National Water Information System (NWIS) is the hydrologic data base for the U.S. Geological Survey. Updated versions are released periodically. +